

# Homework Set 2

MAT 203, Elementary Statistics, Term IV  
Coker College  
Dowman P Varn, Instructor

Homework Policy: The point of homework is to learn by doing. I have no problem if you work in groups, use the internet or use human resources to help you complete the assignment. I do ask that you not copy someone else's homework. Please do all the mathematics yourself. By submitting your homework, you implicitly signify that it is your own. This assignment is due at the beginning of class on 24 March 2009.

1. Consider two six-sided dice. Each face on each dice has a 1-in-6 chance of coming up when the die is rolled, and the faces are numbered one through six. Susan rolls a single die and it comes up five. What is the outcome of this trial? What is the sample space?

2. Most credit card numbers are now 16 digits. The first four are used to identify the credit card issuer. Assume that the other 12 are unique to each card. How many possible distinct cards can be issued by a company? Compare this to the number of people on the Earth.

3. Susan now rolls a pair of dice. She would like to roll a total of four or less. What is the probability of doing this?

4. Suppose that the Susan rolls the dice one at a time. The first die comes up one. She then rolls the second die. What is the probability that it is a three?

5. Problem 13, p. 142 of Larson and Farber.

6. I have a standard deck of 52 cards. (See page 136 of Larson and Farber.) What is the probability that a randomly selected card is a spade? So suppose I remove the two of spades from the deck. What is the probability now that a randomly selected card is heart?

7. Problem 28, p. 158 of Larson and Farber.

8. What is the probability of selecting either a face card (K, Q, J) or a club from a deck of cards?

9. Problem 15, p. 166 of Larson and Farber.

10. Calculate  ${}_6P_2$ .

11. How many possible orderings are there of a deck of 52 cards?

12. How many possible hands of five cards can one draw from a standard deck of 52 cards?

13. Problem 20, p. 178 of Larson and Farber.

14. Problem 25, p. 179 of Larson and Farber.

15. Problem 40, p. 180 of Larson and Farber.

16. Calculate  ${}_7C_3$ .

Extra Credit. A woman has two children. (Consider the probability of giving birth to either a boy or a girl to be 50%). She tells you that one of them is a girl. What is the probability that the other child is also a girl?